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Abstract of FR 2491322 (A1)

DISHWASHER WITH A TANK OR AIR IN CIRCULATION BY A FAN TO DRY THE DISH
EAST DEHUMIDIFIES THEN IN CONDUITS AND HEATS FOR RE-USE.

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Description

The present invention relates to a dishwasher provided with a tank in which air put in circulation by a fan to dry the dish is then dehumidified in a duct system and is heated by an appropriate apparatus in order to be again use.

In a dishwasher, of the same kind, known from the German model of utility n° 71 10.279, the elements used to dry the dish occupies an excessive space. Thus in the course of the duct system conveying the air, it is above the tank a filter with steam and on the side an apparatus of heating. The duct system extends moreover to a certain distance beside the tank, from which the fan is also enough distant.

The invention has as an object a dishwasher of which the elements serving with drying are laid out in a somewhat cumbersome way and simplifying the mounting, without one

having to increase the volume of the machine or to reduce dimensions of the tank. This dishwasher is characterized by the fact that the duct system extends, on the one hand, between a lateral wall of the tank and the coating of the machine, placed at low distance of the aforesaid the wall, by its section comprising the inlet opening, located on the side of the tank, like by its other section containing the air outlet opening and, on the other hand, in the free space located below the bottom of the tank by its middle section comprising the fan and the apparatus of heating. It results this advantage from it that the construction elements of predetermined form and volume that are the fan and the apparatus of heating are placed in the machine at the place where it is in any case free place, while single run in the narrow slit ranging between the tank and the coating of the machine the sections of conduits, easily adaptable as for the form of their section.

The mounting is simplified particularly if the duct system constitutes a part of only one plastic part on which by flanges the fan and the apparatus of heating are secured. One obtains, through the tank, a guidance of the air which supports the result of drying if, according to another possible feature of the invention, the inlet opening of the laden air of moisture is in the upper region of the tank and, on the other hand, the outlet opening of the heated air in the low region.

A favorable solution as for humidification of the air and with the discharge of the condensate lies in the fact that the section of the duct system moving downwards starting from the inlet opening is arranged in a vertical tube of condensation with a collecting pocket for the condensate of which a discharge emerges in the tank.

Following a last possible beneficial extension of the invention, the vertical tube of condensation is insulated heat compared to the wall of adjacent tank. From where the advantage that, in consequence of the suppressing of the heating of the vertical tube of condensation by the tank, the hot air extracted from this latter dehumidifier in a relatively high proportion.

The invention will be better included/understood using the detailed description of a taken embodiment like example nonrestrictive and illustrated schematically by the annexed drawing, on which

Figure 1 is a view of face of a dishwasher with indication of the current of hot air serving to the drying of the dish in the open tank

figure 2 is a side view of the taken machine in the direction of the arrow It, figure 1, as well as duct system of air ranging between the tank and the coating of the machine, this last removed on figure 1.

The domestic dishwasher 10 comprises a tank 11 in the shape of box provided with a front door 12 hinged.

The aforementioned tank 11 contains two baskets 13 and 14 to receive the dish to be cleaned, not represented. Pendent the execution of a program of rinsing, one sprinkles the

dish of liquid appropriate poured in the tank 11, in which the drying of the cleaned dish is carried out, with fine of the program, in regimen of air circulation heated.

Duct system 17 comprises a first section 20 which hand of an inlet opening 21 of the loaded hot air of moisture placed in upper region 16 of the tank and extends until in the free volume included/understood below the bottom 22 of the tank. The middle region of this section 20 is arranged out of vertical tube of condensation 23 comprising for the liquid digest a collecting pocket 4 of which a discharge 25 emerges in tank 11. The vertical tube of condensation 23 is insulated compared to the adjoining lateral wall, that from straight 18 of the tank. One thus manages to maintain the dew point relatively low for the condensation of the moisture which the hot air contains and thus to dehumidify the air heavily.

In its path, indicated by discontinuous arrows, through duct system 17, the air pass in a middle section 26 placed below the bottom 22 of the tank and containing a fan 27 of bringing in circulation of the air and an apparatus of heating 28. Duct system 17 being advantageously formed of a part out of plastic of only one piece, for example molded by blow, fan 27 and the apparatus of heating 28 are secured by flanges on corresponding openings of the middle section 26. This middle section 26, duct system 17 continues in another section 30 directed upwards and being completed by an outlet opening 29 in low region 15 of the tank.

Fan 27, in function pendent drying, absorbs laden air of moisture by inlet opening 21 in first section 20 of the duct system. After its dehumidifier in the vertical tube of condensation 23, the aforementioned air arrives at the middle section 26 of duct system 17, section in which it is heated by apparatus 28.

This dry hot air is injected by fan 27 in tank 11 with through-the outlet opening 29 of section 30. The hot air sweeping the cleaned dish causes rapid and complete evaporation of the remainders of liquid adherent to the magpie these of dish.

Claims

1. Dishwasher provided with a tank in which air put in circulation by a fan to dry the dish is then dehumidified in a duct system and is heated by an appropriate apparatus in order to be re-used, characterized dishwasher by the fact that the duct system (17) extends, on the one hand, between a lateral wall (18) of the tank (11) and the coating (19) of the machine, placed at low distance of the aforesaid the wall, by its section (20) comprising the inlet opening (21), located on the side of the tank, like by its other section (30) containing the outlet opening (29) of the air and, in addition, in the free volume located below the bottom (22) tank by its middle section (26) comprising the fan (27) and the apparatus of heating (28).
2. Dishwashers according to claim 1 characterized by the fact that the duct system (17) is formed of a plastic part of only one piece on which are secured by flanges the fan (27) and the apparatus of heating (28).

3. Dishwasher according to any of claims 1 or 2 characterized by the fact that the inlet opening (21) of the laden air of moisture is in the upper region (16) tank (11), and, on the other hand, the outlet opening (29) of the heated air in the low region (15) of this same tank (11).
4. Dishwasher according to any of claims 1 to 3 characterized by the fact that the section of duct system (20) directed downwards starting from the inlet opening (21) is arranged in a vertical tube of condensation (23) comprising, for the condensate, a collecting pocket (24) whose a discharge (25) emerges in the tank (11).
5. Dishwasher according to claim 4 characterized by the fact that the vertical tube of condensation (23) is insulated compared to the wall of tank (18) adjacent.